

## Health Advisory:

### Suspected Outbreak of *E. coli* O157 in the Eastern Region of Missouri

October 5, 2007

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**Health Alerts** convey information of the highest level of importance which warrants immediate action or attention from Missouri health providers, emergency responders, public health agencies, and/or the public.

**Health Advisories** provide important information for a specific incident or situation, including that impacting neighboring states; may not require immediate action.

**Health Guidances** contain comprehensive information pertaining to a particular disease or condition, and include recommendations, guidelines, etc. endorsed by DHSS.

**Health Updates** provide new or updated information on an incident or situation; can also provide information to update a previously sent Health Alert, Health Advisory, or Health Guidance; unlikely to require immediate action.

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Health Advisory  
October 5, 2007

**FROM: JANE DRUMMOND  
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**SUBJECT: Suspected Outbreak of *E. coli* O157 in the Eastern Region of Missouri**

#### Summary:

Five confirmed and suspected cases of *Escherichia coli* O157 have been identified in the Eastern Region of Missouri since late September. Two of these cases have developed hemolytic-uremic syndrome (HUS). All 5 cases have been in children <7 years of age. No source of infection has been identified.

The Missouri Department of Health and Senior Services (DHSS) is requesting that health care providers and local public health agencies increase surveillance for *E. coli* O157 infections and HUS. This can be accomplished by obtaining stool specimens from all individuals presenting to medical care with an illness that might be caused by infection with this organism (see below). In addition, all diagnosed or suspected cases should be reported promptly to your local public health agency, or to DHSS at 800/392-0272 (24/7).

#### Description of the cases:

Since late September, 5 confirmed and suspected cases of *E. coli* O157 infection have been identified in children <7 years of age in the Eastern Region of Missouri. Cases have been reported from St. Louis City, and from Pike, Jefferson and St. Charles Counties. Two of these cases have developed HUS.

Since the beginning of 2007, a total of 24 cases of *E. coli* O157 have been reported from the Eastern Region, with the ages ranging from 1 to 83 years. Except for the 2 recently diagnosed HUS cases, none of the other cases have developed HUS.

#### Hemolytic-uremic syndrome (HUS):

HUS is caused primarily by Shiga toxin-producing *E. coli* O157:H7. This organism is associated with diarrhea, hemorrhagic colitis, HUS, and postdiarrheal thrombotic thrombocytopenic purpura (TTP). Illness often begins with nonbloody diarrhea, but usually progresses to diarrhea with visible or occult blood. Severe abdominal pain is typical; fever occurs in less than one third of cases. Severe infection can result in hemorrhagic colitis.

HUS is the most common cause of acute renal failure in children. HUS can also occur in adults. It is characterized by the acute onset of microangiopathic hemolytic anemia, renal injury, and low platelet count. Most cases of HUS occur after an acute gastrointestinal illness (usually diarrheal).

The following are both present at some time during the illness:

- Anemia (acute onset) with microangiopathic changes (i.e., schistocytes, burr cells, or helmet cells) on peripheral blood smear, and

- Renal injury (acute onset) evidenced by either hematuria, proteinuria, or elevated creatinine level (i.e.,  $\geq 1.0$  mg/dL in a child aged  $<13$  years **or**  $\geq 1.5$  mg/dL in a person aged  $\geq 13$  years, **or**  $\geq 50\%$  increase over baseline).

A low platelet count can usually, but not always, be detected early in the illness, but it may then become normal or even high.

Patients who develop HUS often require prolonged hospitalization, dialysis, and long-term follow-up.

Laboratory studies:

Stool cultures should be obtained from all patients with acute bloody diarrhea, painful nonbloody diarrhea, diarrhea with fever, acute diarrhea in an immunocompromised patient, or diarrhea in a patient who has a family member with a stool culture positive for *E. coli* O157. **If there is uncertainty regarding the laboratory's practice, it is important to request that testing for *E. coli* O157:H7 be performed. Submitted stools should be plated, on receipt in the laboratory, on sorbitol MacConkey agar as a matter of priority. Assays for Shiga toxin should not be used as the sole screen.** All isolates positive for *E. coli* O157 should be forwarded to the Missouri State Public Health Laboratory for additional testing. The specimen submission form should be marked to indicate that the specimen is being sent as part of a potential outbreak investigation.

Reporting of diagnosed or suspected cases:

In addition to obtaining stool specimens from suspected cases, health care providers should promptly report all diagnosed or suspected cases of *E. coli* O157 infection to their local public health agency, or to DHSS at 800/392-0272 (24/7). This will allow all cases (or their family members) to be interviewed promptly by public health personnel to determine possible sources of infection.

Questions should be directed to the DHSS's Bureau of Communicable Disease Control and Prevention at 573/751-6113, 866/628-9891, or 800/392-0272 (24/7).